

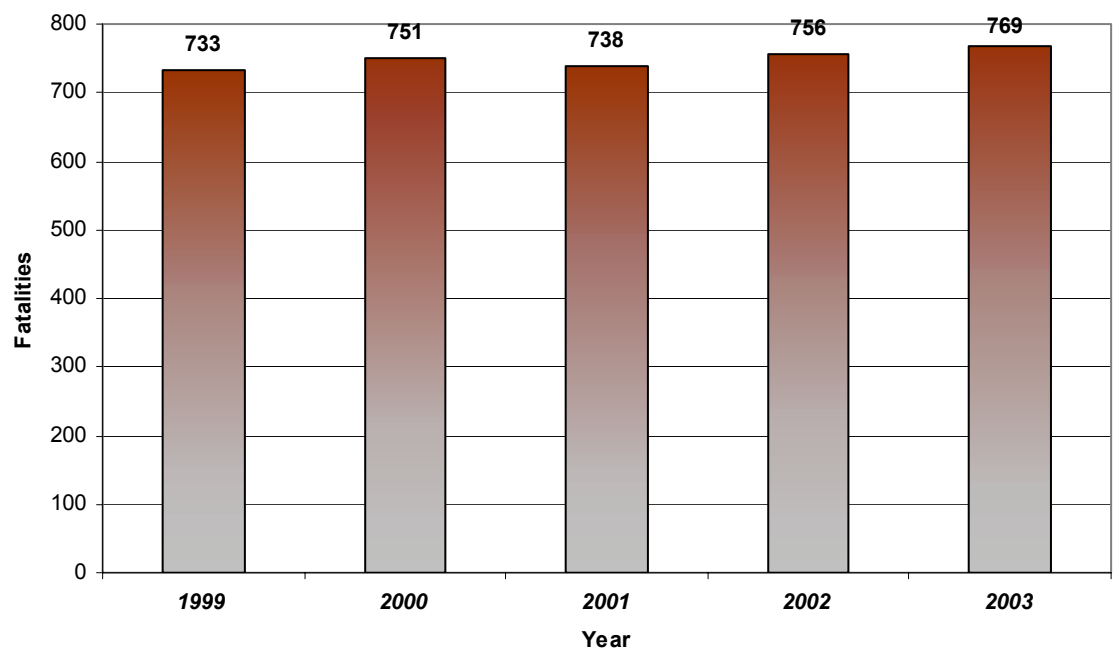
Roadway Departure

Background

Each year, roadway departure crashes account for more than 700 deaths, or about half of all Illinois highway fatalities. One of the most serious lane departure crashes is a “head-on” crash, which occurs when a vehicle departs its travel lane and collides with an oncoming vehicle. Another lane departure crash that often results in fatalities and life-altering injuries is a “run-off-road” crash, which occurs when a vehicle departs its travel lane and collides with a fixed object or overturns.

The ideal solution to roadway departure crashes is to keep vehicles from leaving the travel lane. One means of doing so is to identify cost-effective strategies that reduce unintentional lane departures. For events when departure is imminent, the primary objective is to alert the driver beforehand. The secondary objective is to assist the driver in safely returning to the travel lane and minimize the consequences of departure by creating clear zones along the roadside. The most common fixed objects involved in run-off-road crashes are trees, and the results of such crashes are generally quite severe. Nationally, fatal tree crashes account for 8 percent of all traffic fatalities, with 90 percent occurring on two-lane roads.

Figure 11. Illinois Roadway Departure Fatalities



Source: FHWA Field Services

Utility poles represent one of the more substantial objects that are intentionally placed on roadsides, and the United States has more than 88 million utility poles on highway right-of-way. Due to a pole's structural strength and small vehicle contact area, crashes involving them are often severe and are second only to trees for fatal fixed-object crashes.

Recent Implemented Strategies

- Installed milled-in rumble strips to both shoulders of Interstate roadways.
- Updated IDOT's Resurface, Restoration, Rehabilitation (3R) policy, directing levels of improvement in pavement width, shoulder width and type, and roadside clearing and barrier installation.
- Continued IDOT's Hazard Elimination Safety Program through annual identification of high crash locations.
- Installed only new guardrail end sections that pass NCHRP 350 crash testing requirements.
- Enhanced county 911 systems to coordinate with highway road signs.

Challenges

- Inaccurate crash locating from crash reports.
- Data issues regarding local system roadway characteristics and inventory.
- Lack of a common local reference system.
- Identification of driver and roadway causal factors.
- Instances of suicide unknown.
- Retro-reflectivity maintenance of signs.
- Development and retrofit of improved and crashworthy roadside hardware.
- Limited resources to upgrade or rebuild existing roadway infrastructures.
- Geographical constraints of EMS response capabilities and "911" range.
- Determination of accurate impact of deer crashes.
- Lack of trauma centers in lower half of the state.
- Malpractice crises limits the surgical resources available in some trauma centers and prevents recruiting effort for potential trauma centers.

Proposed Strategies

- Initiate and participate in Road Safety Assessments.
- Develop standard operating procedures for implementing roadway safety improvements such as:
 - Centerline rumble strips and stripes
 - Shoulder rumble strips and stripes
 - All-weather pavement markings
 - Wide pavement markings
 - Raised pavement markings
 - 3-D tape
 - Alignments meeting minimum design speeds

- Improved shoulders
- Directional signs
- New median barrier devices and installations
- Passing lanes on rural two-lane roads
- NCHRP 350 crash tested devices
- Apply forgiving roadway design concepts such as:
 - Fixed object removal and relocation
 - Barrier protections of fixed objects
 - Adequate clear zones
 - Flattened slopes
- Provide training to local agencies on roadside safety design.
- Implement asset management for roadside safety features.
- Expand and maintain roadway visibility features.
- Implement greater legibility standards, including Clearview Font, for sign fonts.
- Develop a procedure for law enforcement officers to request engineering assessments of crash sites.
- Train and educate drivers to safely recover after leaving the roadway.
- Provide selective enforcement directed at speeding and impaired driving.
- Evaluate the use of Intelligent Transportation Systems (ITS) to alert traffic of errant vehicles.
- Update, enhance, and maintain 911 systems and databases to better facilitate EMS response.
- Implement driver awareness programs on the dangers of impaired, fatigued, and distracted driving.
- Utilize NCHRP Report 500 - Volume 3: A Guide for Addressing Collisions with Trees in Hazardous Locations.
- Utilize NCHRP Report 500 - Volume 4: A Guide for Addressing Head-On Collisions.
- Utilize NCHRP Report 500 - Volume 6: A Guide for Addressing Run-Off-Road Collisions.
- Utilize NCHRP Report 500 - Volume 7: A Guide for Addressing Collisions on Horizontal Curves.
- Utilize NCHRP Report 500 - Volume 8: A Guide for Addressing Collisions Involving Utility Poles.
- Investigate all recent implemented strategies for success.